

# **Baldy Mountain Landscape Resiliency and Habitat Improvement Project**

## **MANAGEMENT INDICATOR SPECIES REPORT**

Ouray Ranger District, Grand Mesa, Uncompahgre, and Gunnison National Forest



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MIS are those species that have been selected by national forests within their Forest Plans to represent the habitat needs of a larger group of species requiring similar habitats. Descriptions of the habitat relationships, distributions and trends, population trends and status, and summaries of their associated Forest Plan Directions, Standards and Guidelines for the forest MIS, are described in the Management Indicator Species Assessment for the Grand Mesa, Uncompahgre and Gunnison National Forests (2005) as well as the 2005 amended Forest Plan. The MIS listed in the 2005 MIS Forest Plan Amendment, are summarized in Table 1 below, along with the determination of either their known presence or the presence of suitable habitat within the project area. Suitable habitat is based on field surveys, a review of the literature, and forest mapping of the vegetation. Some of these species are also Forest Service Sensitive Species. The assessment for these species can be located in the Biological Evaluation (BE) prepared for this project. Also refer to the BE for project description, proposed action, alternatives (only other is No Action Alternative), Management Direction, Project Design Features, Existing Condition, and Historical Range of Variation. Management direction from the 1991 Revised GMUG Forest Plan concerning management indicator species will be included in this document.

**Table 1.** List of MIS from 2005 Forest Plan Amendment

Common Name	Scientific Name	Habitat Association	Known/suspected to be present?	Suitable Habitat Present	Rationale if not carried forward for analysis
Elk	<i>Cervus elephus</i>	General habitats	Yes	Yes	Carried Forward
Abert's squirrel	<i>Sciurus aberti</i>	Ponderosa pine	No	Limited	Abert's squirrel primary habitat is limited in the project area as single or small isolated clumps.
Brewer's sparrow*	<i>Spizella breweri</i>	Sagebrush	No	No	No habitat present
Northern goshawk*	<i>Accipiter gentiles</i>	Aspen/conifer	Yes	Yes	See BE for effects and determination.
Merriam's wild turkey	<i>Meleagris gallopavo</i>	Pinyon/Juniper, oak, mtn. shrub, ponderosa pine	Yes	Yes	Carried Forward
Pine (American) marten*	<i>Martes Americana</i>	Spruce-fir	Yes	Yes	See BE for effects and determination.
Red-naped sapsucker	<i>Sphyrapicus varius</i>	Aspen	Yes	Yes	Carried forward

Colorado River Cutthroat Trout	<i>Oncorhynchus spp.</i>	Aquatic	No	No	Project activities will have no potential to impact this species. No water depletions will result from implementation of the proposed action.
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\*Effects to these species are analyzed in the Biological Evaluation for the Baldy Mountain Project project. These species will not be analyzed in this document but management direction will be included here.

## Elk

## *Cervus elephus*

Elk use a variety of forest types and ecosystems throughout the year. The forest plan identifies winter habitat as the threshold that dictates the carrying capacity of the species on the forest. Winter range in Colorado is dictated by low snow loads typically found on south facing aspects, in mid elevations, valleys, and high desert ecosystems, like pinyon-juniper and sage brush, ponderosa pine and shrublands. In summer elk tend to move up in elevation and spend a great deal of time in spruce-fir and aspen forest types. Cow elk will also seek these higher elevations and more protected areas to have their calves.

Elk are generalists in that they feed by both grazing and browsing and are able to digest large quantities of what would be considered low quality feed for domestic livestock. Grasses, shrubs (including sage brush), aspen twigs and bark are important winter forage components. In some areas of Colorado dead leaves comprise a portion of the winter diet (Hobbs 1979). Generally, forbs are more important in the late spring and early summer. Grasses increase in importance as the summer progresses (Fitzgerald et.al. 1994). In some areas of Colorado, 77-90% of the summer diet is composed of grasses, and browse constitutes 56% of the winter diet (Boyd 1970).

Under normal circumstances elk are nocturnal or crepuscular with regard to their activities. Elk tend to rest during the daytime and usually bed in heavy and old growth timber. In the winter elk do seek cover, but may bed out on open slopes in the snow.

Many, but not all elk populations, are migratory using different ranges for winter, spring (transitional), summer and fall (transitional). Summer ranges tend to be higher in elevation while winter ranges occur at lower elevations.

Elk start breeding in the late summer and usually complete breeding activity by the end of October. Mature bulls acquire harems consisting of cows with their calf of the year. Females breed yearly having up to 3 estrous cycles if initial breeding was unsuccessful. The success rate for mature females in Colorado is 76% (Freddy 1987). The majority of breeding is done by bulls 3 years and older. Conception rate for yearling bulls breeding is low. Adult cows typically produce 1 calf per year with twins being rare. Female bands will migrate together to calving grounds from their winter/spring ranges. The female will isolate herself from the herd to bear her calf. Calving sites are usually found where water, cover and forage are close to one another.

These areas are typically occupied from May 15 – June 15 for calving. The cow and calf will return to the herd in 2-3 weeks.

Elk in Colorado are generally found above 6000' (1800 m.). They utilize a variety of habitats which include lodgepole (*Pinus contorta*), spruce-fir (*Picea engelmannii* & *Abies lasiocarpa*), Douglas-fir (*Psuedotsuga menziesii*), Quaking aspen (*Populus tremuloides*) and mountain shrub types in combination with high mountain alpine meadows and lower meadows and pastures depending on the season. Elk require a combination of open meadows for foraging and woodlands for hiding cover, calving and thermal regulation. The use of open areas by elk tends to decrease 100m. from the forest edge. Slopes from 15-30% are preferred (USFS 2002). Ideal winter range would include north to northeast facing slopes of densely wooded lowlands for cover combined with south to southwest facing slopes for foraging opportunities. Good transitional range usually includes aspen, meadows, pastures, and other woodland types that provide high quality forage enabling the elk to gain weight prior to winter. Open water availability is also important in association with the habitat types described. Elk can extract some water from consumed plants in the summer and eat snow in the winter (NRCS 1999).

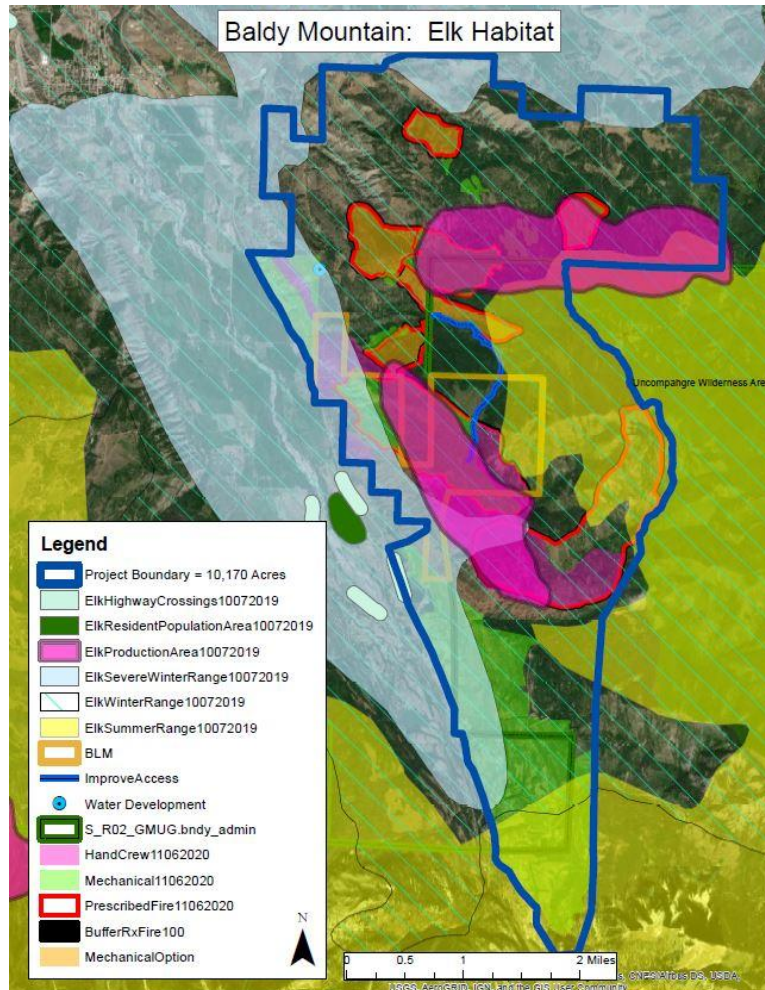


Figure 1. Elk Habitat in project area.

Direct and Indirect Effects



Direct impacts, such as injury or mortality, to the elk from implementation of the proposed action are not anticipated, due to sufficient high quality habitat adjacent to the treatment areas. The most likely case of injury or mortality would be during prescribed or managed fire. Suitable habitats for the elk would be directly impacted, as described in the project-specific effects discussion below. Elk could be present during implementation of the proposed action as well. Increased human activity and associated visual and audible disturbances may temporarily displace individuals from treatment units during harvest activities. Similar effects would result from prescribed or managed fire. Adjacent undisturbed habitats, which are also capable of meeting the needs of elk for feeding and cover, are widely distributed in the analysis area and would be available to elk during project activities. Following completion of activities, the amount of human disturbance would return to current levels.

Spreading of invasive species could indirectly effect elk habitat. This could result in less grazing opportunities. Multiple disturbances from implementation of the proposed action could also result in decreased health of calves. Repeated disturbances could cause cow elk to abandon calves. Proposed actions could also reduce the effectiveness of habitat in elk production areas by excessively reducing the amount of cover where activities are occurring.

The greatest risk to individual elk would be prescribed or managed fire. The greatest indirect effect will be temporary displacement of individuals during project implementation especially within the WUI areas. Sufficient hiding cover will remain in adjacent undisturbed areas within the analysis area where the disturbed areas will remain more open providing more available forage.

The **No Action** alternative would result in no immediate effect to this species or the associated habitats. Without management action fuels including trees and shrubs will continue to build up causing continued forest health decline from plant competition for resources which would be detrimental to some species and status quo or positive for other species. Leaving this area unmanaged could result in a higher risk for a large catastrophic wildfire which would have the potential to negatively impact large amounts of habitat resulting in an ecological type conversion that would take years and perhaps centuries to recover.

### **Merriam's Wild Turkey**

### ***Meleagris gallopavo***

Turkey are widespread and locally abundant across the Ouray Ranger District, especially in oak and other shrub habitats, as well as ponderosa pine, but they occur in all areas below 10,000 feet at times. They are tolerant of human activities, and in winter are commonly found in yards and along roadways in close proximity to humans. They nest in a variety of habitats on the district, although typically in areas with dense local cover. Brood rearing occurs frequently in areas such as opening, riparian areas, springs, burns, and aspen stands, all of which need invertebrates for food for the young birds. Populations of turkey are directly controlled by hunting seasons determined by the CPW. Other population pressures include predation from other species such as coyotes. Habitat alteration can have both harmful and beneficial impacts to turkeys, and treatments which provide a mosaic of habitat features, allowing for all life stages of turkeys, are desired for this species.

Female incubates average of 10-12 eggs for 27-28 days. Most nests initiated mid-April to mid-May in northeastern Colorado. Nests usually occur within very dense local cover, and in forested stands are usually in areas with at least 60% canopy cover. If nests fail, turkeys will make multiple nesting attempts. Young are tended by female; brood stays together until winter. Females first breed as yearlings. Populations in the project area are healthy and turkeys are common.

### Direct and Indirect Effects

The following potential effects to turkey include:

- short-term direct effects during harvest (visual or auditory disturbance or displacement of individuals from machinery, vehicles and humans)
- long-term direct effects as a result of changes in forage and cover

Individual nests could be directly lost or abandoned as a result of project activities, but turkeys may re-attempt nesting elsewhere if project actions are detrimental. Long-term effects in cover type and abundance are unlikely to cause substantial impacts to turkeys, as they utilize a wide variety of habitats. Dense aspen regeneration, as well as dense mountain shrub habitats, can provide nesting habitat post-implementation. Long-term changes in human use of the area are unlikely to result from this project.

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### **Red-naped sapsucker**

### *Sphyrapicus varius*

The red-naped sapsucker is closely associated with pure aspen stands for cavity nesting and they create sap wells in both aspen and willow for foraging. The red-naped sapsucker breeds throughout the Rocky Mountains from British Columbia to southern New Mexico. The GMUG NF is well within the breeding distribution range of the red-naped sapsucker. Throughout western and central Colorado, they breed regularly within deciduous woodlands, especially where deciduous woodlands are associated with riparian areas that contain a willow component. On the GMUG NF, red-naped sapsuckers are primarily associated with mature aspen forests, mature aspen and conifer mixes, and aspen riparian areas with a willow component.

Red-naped sapsuckers are primarily a short-distance migrant. They move south from their breeding range into Mexico, Baja California, southern California, Arizona, and New Mexico, although some individuals winter within their breeding range in Arizona and New Mexico (Walters et al. 2002). In Colorado, transient red-naped sapsuckers establish feeding territories during March in pinyon-juniper habitats before moving to breeding grounds at higher elevations in early April. The timing of territory establishment and pair formation may be delayed by colder than average temperatures or other inclement weather (Walters et al. 2002). Pair

formation and nest excavation typically begins within three weeks of arrival to the breeding grounds. Following territory establishment and pair formation, the nesting season extends from mid or late April to early August, with most nesting activity concentrated between mid-May to mid-July in Colorado (Walters 2002). Juvenile sapsuckers are capable of foraging on their own soon after they leave the nest (Crockett and Hadow 1975, Tobalske 1992). Red-naped sapsuckers only raise one brood per season, although pairs sometimes renest if the first nest fails (Walters et al. 2002). This species may reuse the same cavity in subsequent years. Fall migration takes place from early August to late October, typically peaking in September (Campbell et al. 1990, Gilligan et al. 1994, Lehman 1994, Russell and Monson 1998, Walters 2002). In Colorado, transient red-naped sapsuckers usually exhibit movements to lower elevations in pinyon pine-juniper habitats by early September before migrating to winter ranges.

The red-naped sapsucker is considered globally “secure” by the Natural Heritage Program due to its wide distribution across North America. According to the Breeding Bird Survey (BBS), populations appear to be stable to increasing in the United States, with areas of local declines. Local declines may be related to a loss of cottonwood and aspen nesting habitats.

During wildlife surveys and monitoring for this project, no cavities were discovered in aspen stands where this species would be nesting.

#### Direct and Indirect Effects

Within the project action area, the red-naped sapsucker primarily utilizes forests of mature aspen and aspen/conifer in structural stages 4A, 4B, and 4C/5 that are in close proximity to stands of willow. Mature and old growth forest habitat contain key habitat elements for cavity nesting species. The red-naped sapsucker utilizes the numerous snags or live trees with damage or rot for nest trees. These trees are easier to excavate cavities in than sound, hard snags and live trees. Insect activity is also normally associated with snags, damaged trees, and down logs. Secondary habitat includes the younger stands of aspen and aspen/conifer in structural stages 3A, 3B, and 3C.

Much of the direct effects to this species would be mitigated through implementation of the project design features (See associated BA/BE) including avoidance of treatments during nesting. Direct effects could result in displacement of individuals during implementation and a potential loss of nesting trees. Primary habitat is limited in the project area and will not be significantly impacted. Secondary habitat is more common. One of the project objectives is to treat aspen to stimulate resprouting ensuring the long-term presence of aspen in the project area. The project could kill some mature aspen trees which could indirectly create future nesting trees and foraging habitat.

#### Cumulative Effects

#### **Elk, Turkey and Red-Naped Sapsucker**

Actions which have occurred and will likely continue to occur in the project area include: cattle grazing, recreation outfitters (horseback riding on the horse trails on Baldy Mountain in the

summer, and snowmobile riding along NFSR 872 and NFSR 872.1B in the winter), hunting including by outfitter on Baldy Mountain and hunting on the Mullin's ranch by family members and outfitter as well. Development on private property of homes and maintenance of utilities will also continue. There have been no federal actions aside from permit administration for grazing, and recreation and hunting outfitters and maintenance of the trail system.

North of the project boundary domestic sheep graze on private property not associated with this project. Domestic Sheep ranches have reached out to the Mullin's Ranch requesting lease of their land for wintering domestic sheep in the past. However, the Mullin's have denied all requests with concern of domestic sheep coming into close proximity to wild Rocky Mountain bighorn sheep and the subsequent risk of disease transmission from domestic sheep to bighorns. Although the entire western aspect west of Baldy Peak and south beyond Ouray is bighorn sheep winter range, Colorado Parks and Wildlife does now want to encourage bighorn sheep being drawn further north beyond County Road 3A or beyond the BLM boundary to reduce the risk of contact with domestic sheep (See Figure Four for bighorn sheep habitat map). Wildland urban interface treatments in the Piedmont Hills Subdivision (units M11 and 12 and H7) could inadvertently result in desirable bighorn sheep wintering habitat. Treatments in these areas will be closely coordinated with Colorado Parks and Wildlife to lower the risk of a damaging wildfire to private property while not creating desirable bighorn sheep habitat.

In Colorado forests, fire, insects, and disease are among the major disturbance agents for changing forest composition and structure at both fine and broad scales. Insects such as wood borers, defoliators, and bark beetles typically exist at low levels, but can occasionally form significant outbreaks that can quickly cause widespread tree mortality. Disease and environmental stressors are also causing widespread decline of many aspen stands in Colorado (Worrall et al. 2010; Marchetti et al. 2011).

According to the United States Environmental Protection Agency Colorado's climate is changing (2016). The western side of Colorado has increased 2-2.5 degrees Fahrenheit in the last century (U.S. EPA, 2016). These temperature shifts have caused early season melting and run-offs and drier soils due to evaporation. In the last 50 years more late winter precipitation has fallen as rain instead of snow. Over much of the state the April snowpack has declined 20-60% in the last 60 years. Of the several monitoring sites that were observed between 1955 and 2015, three of them in the project area of the San Juan's showed similar results where April snowpack declines were between 5 and 40% (U.S. EPA, 2016). Removal of vegetation will result in some amount of decreased carbon sequestration and release of carbon dioxide to the atmosphere from prescribed burning. However, this amount is immeasurable and minor. The sequestration of carbon will still be greater versus the amount of sequestration that would occur after a catastrophic wildfire. The release of carbon dioxide will also be less than that of an uncontrollable large and catastrophic wildfire as well.

Cumulatively, these effects when considered along with the direct and indirect effects of the proposed action do not raise the level of significance of overall effects for any of the species. Immediately after treatments for the following one to two years, until the area recovers from the treatments impacts to most associated species will be negative. Implementing this project in phases will allow wildlife to move to adjacent suitable untreated habitats within and outside of



the project area. Following recovery, the benefits from the treatments will outweigh the negative effects of their implementation combined with cumulative impacts.

## **Mitigation Measures 1991 Land and Resource Management Plan Standards and Guidelines**

### **Coverall Standards**

- Manage for habitat needs of indicator species.
- Manage habitat for viable populations of all existing vertebrate species.

### **Rocky Mountain Elk**

#### **Standards and Guidelines**

- Deer and elk. Provide hiding cover within 1,000 ft of any known calving areas.
- Deer, elk, black bear and goshawk: In areas of historic shortage of dry season water, where there is less than one source per section, create one source per section.
- Maintain habitat capability at a level at least 40% of potential capability.<sup>1, 2</sup>
- In forested areas, maintain deer or elk cover on 60% or more of the perimeter of all natural and created openings, and along at least 60% of each arterial and collector road that has high levels of human use during the time deer and elk would be expected to inhabit the area. Cover should be located and measured perpendicular to the road. Gaps between cover along roads should not exceed 0.25 mi. Roads with restricted use could provide for less cover. Maintain cover along 40% of each stream and river.
- In diversity units dominated by forested ecosystems, the objective is to provide for a minimum habitat effectiveness of 40% through time. Habitat effectiveness will be determined by evaluating hiding and thermal cover, forage, roads, and human activity on the roads. Cover should be well distributed over the unit. Hiding and thermal cover may be the same in many cases. Minimum size cover areas for mule deer are 2-5 acres and for elk 30-60 acres.
- In diversity units dominated by non-forested ecosystems, a maintain deer and elk hiding cover as follows:

<b>% of Unit Forested</b>	<b>% of Forested Area in Cover</b>
35-50	At least 50
20-34	At least 60
<20	At least 75

- These levels may be exceeded temporarily during periods when stands are being regenerated to meet the cover standard, or to correct tree disease problems, in aspen stands, or where windthrown or wildfire occurred. Maintain hiding cover along at least 75% of the edge of arterial and collector roads, and at least 60% along streams and rivers, where trees occur.
- Alter age classes of browse stands in a diversity unit, no more than 25% within a ten-year period.

### **Transportation System Management**

#### **General Direction**

- Manage public motorized use on roads and trails to maintain or enhance effective habitat for elk.
- Manage road use by seasonal closure if: use causes unacceptable wildlife conflict or habitat degradation.

- Keep existing roads open to public motorized use unless: Use conflicts with wildlife management objectives

#### **Standards and Guidelines**

- Objective level of habitat effectiveness for elk within each fourth order watershed is at least 40%. (This standard varies with specific management area guidelines)

### **Northern Goshawk**

#### **Standards and Guidelines**

- Goshawk (mature aspen): Provide 20% of pole of mature tree stands adjacent to nesting sites with at least 150 ft<sup>2</sup> of basal area. Provide at least one class 1 log adjacent to nesting sites.
- Deer, elk, black bear and goshawk: In areas of historic shortage of dry season water, where there is less than one source per section, create one source per section.
- Maintain habitat capability at a level at least 40% of potential capability.<sup>1,2</sup>
- Provide 20% of pole of mature tree stands adjacent to nesting sites with at least 150 ft<sup>2</sup> of basal area. Provide at least one class 1 log adjacent to nesting sites.
- No activities shall be allowed within ¼ mile of an active northern goshawk nest from March 1 to July 31 if they would cause nesting failure or abandonment.

### **American Marten (Also a sensitive species)**

#### **General Direction**

- Maintain structural diversity of vegetation on units of land 5,000 to 20,000 acres in size, or fourth-order watersheds that are dominated by forest ecosystems.
- In forested diversity units, maintain 200 - 300 snags (in all stages of development) per 100 acres, well distributed over the diversity unit

#### **Standards and Guidelines**

- Pine marten (old growth spruce-fir): created openings should be less than 300 ft in width. Provide diversity of forest communities.
- Maintain habitat capability at a level at least 40% of potential capability.<sup>1,2</sup>
- In forested areas of a unit, 5-12% or more will (where biologically feasible) be in an old growth forest classification and must occur in irregular shaped patches. Designated spruce-fir and mixed conifer old growth patches shall be no smaller than 30 acres in size and should average 100-200 acres in size whenever possible... For every 10,000 acres of forest land capable of providing forest stands meeting old growth criteria, 500-1,200 acres of old growth will be evenly distributed throughout the unit. In addition, other stands within the same unit will be designated so that these stands will be managed on extended rotations in order to develop their old growth structure and values so that these stands will serve as old growth replacement stands.
- Snag dependent species must be maintained by providing habitat that will maintain minimum viable populations
- Maintain 10-20 tons of logs and other down woody material per acre for species dependent on this material for their habitat (Pine Marten) (USDA Forest Service, 1991).

### **Merriam's Turkey**

- See coverall standards.

### **Red-naped Sapsucker**

- See coverall standards.

### **Summary for Elk, Merriam's Turkey and Red-naped Sapsucker**

Implementation of the design features to avoid disturbance to big game winter range will mitigate much of the impacts to **elk**. Fall burning would result in a loss of browsing and foraging species until the following growing season. Spring burning could displace individuals that may still be on their winter range past green up. Activities should be restricted in production areas from **May 15 to June 15** (See Figure 1). Exception could be granted from a CPW wildlife biologist. Actions are not expected to result in a loss of viability in the planning area and are expected to have a net positive outcome for this species long term. The implementation of this project over several years will also stagger impacts and spread them out overtime thus lessening the severity.

Implementation of the design feature to prohibit vegetation treatments between May 15th and July 15th will mitigate much of the impacts to the **red-naped sapsucker and Merriam's turkey**. Protection of snags will help mitigate loss of any potential nesting trees. It is expected that long term impacts will be beneficial to these species by retaining components of habitat both within and outside of treatment areas, diversifying age-classes. Proposed activities may impact individuals but they are not expected to result in a loss of viability in the planning area. The implementation of this project over several years will also stagger impacts and spread them out overtime thus lessening the severity.

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